

**What is Claimed is:**

1. A tracheal gas insufflation system comprising:
  - a patient circuit adapted to couple a ventilator to an airway of a patient;
  - an insufflation catheter having a proximal end portion located generally outside a patient and a distal end portion adapted to be located in an airway of a patient for providing a flow of insufflation gas to such a patient;
  - a source of insufflation gas; and
  - a flow control system coupled between the patient circuit, the insufflation catheter, and the source of insufflation gas so as to control a flow of gas between the patient circuit, the insufflation catheter, and the source of insufflation gas.
2. The system of claim 1, wherein the flow control system includes a first selectively actuatable valve connected between the source of insufflation gas, the insufflation catheter, and the patient circuit, wherein the first valve is adapted to be arranged to:
  - a) communicate the insufflation catheter with the source of insufflation gas and disconnect the patient circuit from the source of insufflation gas and the insufflation catheter in a first configuration,
  - b) communicate the insufflation catheter with the patient circuit and disconnect the source of insufflation gas from the insufflation catheter and the patient circuit in a second configuration.
3. The system of claim 2, wherein the flow control system includes a servo-controlled valve adapted to control a flow of gas from the patient circuit to ambient atmosphere.
4. The system of claim 3, wherein the flow control system includes a flow sensor adapted to measure a flow of gas through the servo-controlled valve.

5. The system of claim 2, further comprising a master shut-off valve adapted to disconnect the source of insufflation gas from the insufflation catheter and the patient circuit.

6. The system of claim 1, further comprising a pressure sensor adapted to determine a pressure in the insufflation catheter.

7. The system of claim 1, wherein the flow control system includes a first selectively actuatable valve connected between the source of insufflation gas, the insufflation catheter, and the patient circuit, wherein the first valve is adapted to be arranged to:

a) communicate the insufflation catheter with the source of insufflation gas and disconnect the patient circuit from the source of insufflation gas in a first configuration, (TGI)

b) communicate the source of insufflation gas with the patient circuit and disconnect the insufflation catheter from the patient circuit and the source of insufflation gas in a second configuration. (VENT)

8. The system of claim 7, further comprising a second selectively actuatable valve connected between the insufflation catheter and the patient circuit, wherein the second valve is adapted to communicate the insufflation catheter and the patient circuit responsive to the first valve being in the second configuration.

9. The system of claim 7, further comprising a master shut-off valve adapted to disconnect the source of insufflation gas from the insufflation catheter and the patient circuit.

10. A method of providing an insufflation gas to a patient comprising:  
providing a patient circuit adapted to couple a ventilator to an airway of a  
patient;

providing an insufflation catheter having a proximal end portion located  
generally outside a patient and a distal end portion adapted to be located in an airway of a  
patient for providing a flow of insufflation gas to such a patient;

providing a source of insufflation gas; and

controlling a flow of gas between the patient circuit, the insufflation  
catheter, and the source of insufflation gas.

11. The method of claim 10, wherein controlling the flow of gas between  
the patient circuit, the insufflation catheter, and the source of insufflation gas includes:

a) communicating the insufflation catheter with the source of insufflation  
gas and disconnecting the patient circuit from the source of insufflation gas and the  
insufflation catheter in a first configuration, (TGI)

b) communicating the insufflation catheter with the patient circuit and  
disconnecting the source of insufflation gas from the insufflation catheter and the patient  
circuit in a second configuration. (VENT)

12. The method of claim 11, further comprising controlling a flow of gas  
from the patient circuit to ambient atmosphere.

13. The method of claim 12, further comprising measuring a flow of gas  
through from the patient circuit to the ambient atmosphere.

14. The method of claim 11, further comprising disconnecting the source  
of insufflation gas from the insufflation catheter and the patient circuit via a master shut-  
off valve.

15. The method of claim 10, further comprising measuring a pressure in the insufflation catheter.

16. A ventilator and tracheal gas insufflation system comprising:

- a housing;
- a pressure generator disposed within the housing;
- a patient circuit connector disposed on an exterior of the housing adapted to connect to a patient circuit;
- an insufflation catheter connector disposed on the exterior of the housing adapted to connect to an insufflation catheter;
- a first tube disposed in the housing and connecting an outlet of the pressure generator to the patient circuit connector;
- a second tube disposed in the housing and connecting a source of insufflation gas to the insufflation catheter connector; and
- a first flow control system operatively coupled to the first tube to control a flow of gas in the patient circuit; and
- a second flow control system operatively coupled to the second tube to control a flow of insufflation gas in the insufflation catheter.

17. The system of claim 16, wherein the second flow control system is coupled between the first tube, the second tube, and such a source of insufflation gas so as to control a flow of gas between the patient circuit, the insufflation catheter, and the source of insufflation gas.

18. The system of claim 16, wherein the source of insufflation gas is the pressure generator.

19. The system of claim 16, further comprising:  
an insufflation catheter connected to the insufflation catheter connector;  
and  
a patient circuit connected to the patient circuit connector.

20. The system of claim 16, further comprising a sensor operatively coupled to the second tube to detect a characteristic associated with the flow of gas in the second tube.

21. A ventilator and tracheal gas insufflation system comprising:  
a patient ventilation system adapted to generate a flow of gas for delivery to an airway of a patient;  
a patient circuit operatively coupled to the ventilation system for carrying the flow of gas from the ventilation system to an airway of a patient;  
an insufflation system adapted to generate a flow of insufflation gas for delivery to an airway of such a patient;  
an insufflation catheter operatively coupled to the insufflation system for carrying the flow of gas from the insufflation system to an airway of a patient, wherein a portion of the insufflation system is disposed within the patient circuit; and  
a housing containing the patient ventilation system and the insufflation system.

22. The system of claim 21, further comprising:  
a patient circuit connector disposed on the housing and adapted to connect the patient circuit to the ventilation system; and  
an insufflation catheter connector disposed on the housing and adapted to connect the insufflation catheter to the insufflation system.

23. The system of claim 21, wherein the ventilation system and the insufflation system share a common source of gas.